

CLAIMS

1. Process for the electrolysis of Al_2S_3 , using a bath of molten salt, preferably a bath of molten chloride salt, in which Al_2S_3 is dissolved characterised in that
5 measures are taken to improve the electrical conductivity of the bath, so as to enable an increase in the current density in the bath.
2. Process according to claim 1 characterised in that the measures comprise adding an additive to the bath.
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3. Process according to claim 2 characterised in that the additive comprises, preferably mainly consists of a fluoride compound.
4. Process according to claim 3 characterised in that the fluoride compound is
15 cryolite.
5. Process according to claim 4 characterised in that the concentration of the cryolite is in the range of 5 – 30 wt%, preferably 7 – 15 wt%, more preferably about 10 wt%.
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6. Process according to any of the preceding claims characterised in that the measures comprise enhancing the effective area of an anode extending into the bath by reducing the amount and/or size of gas bubbles covering the anode.
- 25 7. Process according to any of the preceding claims characterised in that the bath of molten salt mainly comprises alkali metal chlorides, preferably KCl and NaCl.
8. Process according to any of the preceding claims characterised in that the bath
30 of molten metal is substantially free of earth alkaline chlorides.

9. Process according to any of the preceding claims characterised in that the electrolysis is carried out at a bath temperature of between 600°C and 850 °C, preferably between 700 °C and 800 °C.
- 5 10. Process according to any of the preceding claims characterised in that the electrolysis is carried out in a multi-polar electrolysis cell.